

Write proofs in two-column form for each of the theorems below. Remember to include a figure with each proof. Writing a plan for the proof is optional but it may help you get started.

1. Vertical angles are congruent.
2. If two parallel lines are cut by a transversal, then alternate interior angles are congruent.
3. If two parallel lines are cut by a transversal, then alternate exterior angles are congruent.

4. If two parallel lines are cut by a transversal, then the pairs of same-side interior angles are supplementary.

5. If two parallel lines are cut by a transversal, then the pairs of same-side exterior angles are

supplementary.

6. If two lines are cut by a transversal so that a pair of alternate interior angles are congruent, then the lines are parallel.

7. If two lines are cut by a transversal so that a pair of same-side interior angles are supplementary, then the lines are parallel.